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PCT

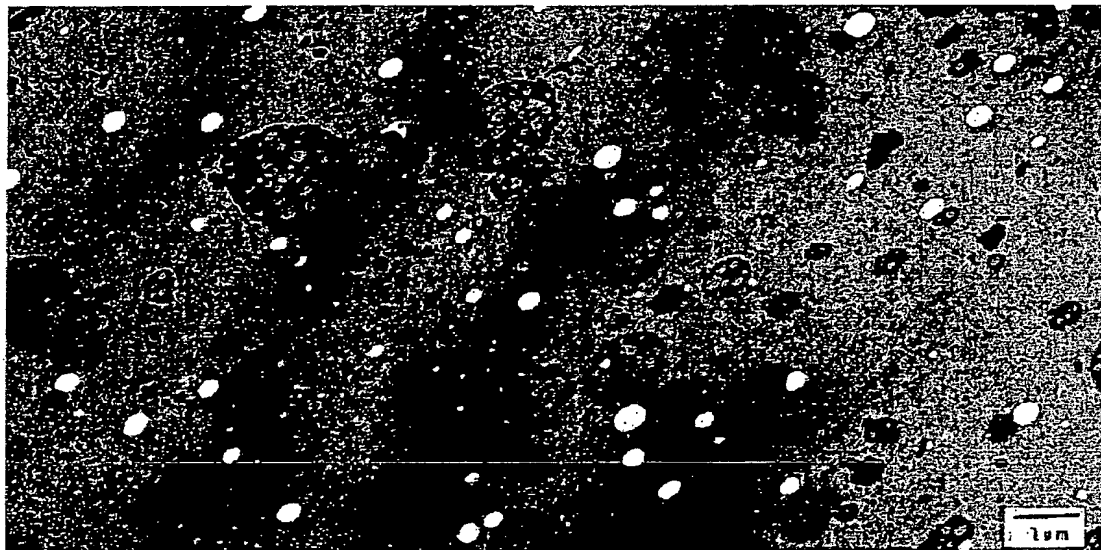
(10) 国際公開番号  
WO 2004/087809 A1

- (51) 国際特許分類<sup>7</sup>: C08L 25/04, 71/12, C08K 5/51 (71) 出願人(米国を除く全ての指定国について): P S ジャパン株式会社 (PS JAPAN CORPORATION) [JP/JP]; 〒1120002 東京都文京区小石川一丁目4番1号 Tokyo (JP).
- (21) 国際出願番号: PCT/JP2004/004337
- (22) 国際出願日: 2004 年 3 月 26 日 (26.03.2004) (72) 発明者; および
- (25) 国際出願の言語: 日本語 (75) 発明者/出願人(米国についてのみ): 遠藤 茂 (ENDO, Shigeru) [JP/JP]; 〒1110024 東京都台東区今戸 2-24-3-903 Tokyo (JP).
- (26) 国際公開の言語: 日本語 (74) 代理人: 浅村 皓, 外 (ASAMURA, Kiyoshi et al.); 〒1000004 東京都千代田区大手町2丁目2番1号 新大手町ビル331 Tokyo (JP).
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特願2003-090859 2003 年 3 月 28 日 (28.03.2003) JP  
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2003 年 10 月 17 日 (17.10.2003) JP
- (81) 指定国 (表示のない限り、全ての種類の国内保護が可能): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU,

[続葉有]

(54) Title: FLAME-RETARDANT STYRENE RESIN COMPOSITION

(54) 発明の名称: スチレン系難燃樹脂組成物



(57) Abstract: A flame-retardant styrene resin composition which comprises (A) 100 parts by weight of a styrene resin having a weight retention after heating at 500°C of less than 20% and (B) 0.5 to 50 parts by weight of a flame retardant ingredient containing no halogenated compounds, wherein the ingredient (B) has a molecular weight of 200 to 2,000, has been dispersed as circular or elliptic particles having an area-average particle diameter of 0.01 to 3 μm in the ingredient (A), and has a weight retention after heating at 500°C of 20% or higher and a melting point of 100 to 400°C.

(57) 要約: 本発明によって、(A) 500°Cにおける加熱重量減少残さが20%未満のスチレン系樹脂100重量部、及び(B)ハロゲン化合物を含有しない難燃成

[続葉有]



ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

添付公開書類:

— 国際調査報告書

- (84) 指定国 (表示のない限り、全ての種類の広域保護が可能): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ (AT, BE, BG, CH, CY,

2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

分0. 5~50重量部、を含むスチレン系難燃樹脂組成物であって、成分(B)は、その分子量が200~2000であり、成分(A)中に面積平均粒子径0.01~3 $\mu$ mで円または楕円粒子状に分散しており、500℃における加熱重量減少残さが20%以上であり、且つ溶融点が100℃~400℃である、上記スチレン系難燃樹脂組成物が提供される。

(TRANSLATION)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>W1580-000000</b>	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>		
International application No. <b>PCT/JP2004/004337</b>	<table style="width: 100%; border: none;"><tr><td style="width: 50%; border: none;">International Filing date (day/month/year) <b>26.03.2004</b></td><td style="width: 50%; border: none;">(Earliest) Priority Date (day/month/year) <b>28.03.2003</b></td></tr></table>	International Filing date (day/month/year) <b>26.03.2004</b>	(Earliest) Priority Date (day/month/year) <b>28.03.2003</b>
International Filing date (day/month/year) <b>26.03.2004</b>	(Earliest) Priority Date (day/month/year) <b>28.03.2003</b>		
Applicant: <b>PS JAPAN CORPORATION et al</b>			

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- ☐ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II).

3. ☐ Unity of invention is lacking (see Box No. III).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1

- ☒ as suggested by the applicant
- ☐ as selected by this Authority, because the applicant failed to suggest a figure.
- ☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/004337

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C08L25/04, 71/12, C08K5/51

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C08L1/00-101/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CA(STN), WPI/L

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2002-155179 A (A and M styrene Kabushiki Kaisha), 28 May, 2002 (28.05.02), Claims; Par. Nos. [0002], [0007], [0009] to [0012] (Family: none)	1-12, 15, 17-24
Y	JP 2002-210734 A (Teijin Kasei Kabushiki Kaisha), 30 July, 2002 (30.07.02), Claims; Par. Nos. [0002], [0013] to [0019], [0032] (Family: none)	1-4, 9-12, 15-24

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 June, 2004 (24.06.04)

Date of mailing of the international search report

13 July, 2004 (13.07.04)

Name and mailing address of the ISA/

Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/004337

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2002-003727 A (Teijin Kasei Kabushiki Kaisha), 09 January, 2002 (09.01.02), Claims; Par. Nos. [0002], [0012] to [0027], [0033] (Family: none)	1-14, 16-24
Y	JP 09-227772 A (Daicel Chemical Industries, Ltd.), 02 September, 1997 (02.09.97), Claims; Par. Nos. [0002], [0019] (Family: none)	1-4, 9-12, 15-24
Y	JP 2002-020565 A (Toray Industries, Inc.), 23 January, 2002 (23.01.02), Claims; Par. No. [0022] (Family: none)	1-24
Y	JP 10-287814 A (Dainippon Ink And Chemicals, Inc.), 27 October, 1998 (27.10.98), Claims; Par. No. [0013] (Family: none)	12-24